WEST Search History

Hide Items | Restore | Clear | Cancel

DATE: Friday, May 18, 2007

Hide?	Set Name	Query	Hit Count
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ		
☐	L11	saccharomyces and L9	5
☐	L10	actinol and L8	0
☐	L9	trimethylcyclohexanone and L8	5
☐	L8	leuenberger.in.	321
☐	L7	candida and L2	3
☐	L6	zygosaccharomyces and L2	3
☐	L5	saccharomyces and L2	3
☐	L2	actinol same L1	17
☐	L1	(levodione with reductase)	26

END OF SEARCH HISTORY

WEST Search History

Hide Items | Restore | Clear | Cancel

DATE: Friday, May 18, 2007

Hide?	Set Name	Query	Hit Count
		DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ	
☐	L13	saccharomyces and L12	4
☐	L12	(actinol or trimethylcyclohexanone) and L1	20
☐	L1	(levodione with reductase)	26

END OF SEARCH HISTORY

STN SEARCH #10/528,843 5/18/2007

=> index bioscience medicine

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE, AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS, CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 12:35:23 ON 18 MAY 2007

70 FILES IN THE FILE LIST IN STNINDEX

=> S (levodione (w) reductase)

4	FILE BIOENG
9	FILE BIOSIS
7	FILE BIOTECHABS
7	FILE BIOTECHDS
3	FILE BIOTECHNO
2	FILE CABA
8	FILE CAPLUS
31	FILE DGENE
4	FILE EMBASE
4	FILE ESBIOBASE
3	FILE FROSTI
32	FILE GENBANK
7	FILE IFIPAT
5	FILE LIFESCI
5	FILE MEDLINE

43 FILES SEARCHED...

4	FILE PASCAL
11	FILE SCISEARCH
2	FILE TOXCENTER
6	FILE USPATFULL
2	FILE USPAT2
4	FILE WPIDS
1	FILE WPIFV
4	FILE WPINDEX

23 FILES HAVE ONE OR MORE ANSWERS, 70 FILES SEARCHED IN STNINDEX

L1 QUE (LEVODIONE (W) REDUCTASE)

=> d rank

F1	32	GENBANK
F2	31	DGENE
F3	11	SCISEARCH
F4	9	BIOSIS
F5	8	CAPLUS
F6	7	BIOTECHABS
F7	7	BIOTECHDS
F8	7	IFIPAT
F9	6	USPATFULL
F10	5	LIFESCI
F11	5	MEDLINE
F12	4	BIOENG
F13	4	EMBASE
F14	4	ESBIOBASE
F15	4	PASCAL
F16	4	WPIDS
F17	4	WPINDEX
F18	3	BIOTECHNO
F19	3	FROSTI
F20	2	CABA
F21	2	TOXCENTER
F22	2	USPAT2
F23	1	WPIFV

=> file F2-f12, f16

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION

FULL ESTIMATED COST 1.89 2.10

FILE 'DGENE' ENTERED AT 12:37:23 ON 18 MAY 2007
COPYRIGHT (C) 2007 THE THOMSON CORPORATION

FILE 'SCISEARCH' ENTERED AT 12:37:23 ON 18 MAY 2007
Copyright (c) 2007 The Thomson Corporation

FILE 'BIOSIS' ENTERED AT 12:37:23 ON 18 MAY 2007
Copyright (c) 2007 The Thomson Corporation

FILE 'CAPLUS' ENTERED AT 12:37:23 ON 18 MAY 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'BIOTECHABS' ACCESS NOT AUTHORIZED

FILE 'BIOTECHDS' ENTERED AT 12:37:23 ON 18 MAY 2007
COPYRIGHT (C) 2007 THE THOMSON CORPORATION

FILE 'IFIPAT' ENTERED AT 12:37:23 ON 18 MAY 2007
COPYRIGHT (C) 2007 IFI CLAIMS(R) Patent Services (IFI)

FILE 'USPATFULL' ENTERED AT 12:37:23 ON 18 MAY 2007
CA INDEXING COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'LIFESCI' ENTERED AT 12:37:23 ON 18 MAY 2007
COPYRIGHT (C) 2007 Cambridge Scientific Abstracts (CSA)

FILE 'MEDLINE' ENTERED AT 12:37:23 ON 18 MAY 2007

FILE 'BIOENG' ENTERED AT 12:37:23 ON 18 MAY 2007
COPYRIGHT (C) 2007 Cambridge Scientific Abstracts (CSA)

FILE 'WPIDS' ENTERED AT 12:37:23 ON 18 MAY 2007
COPYRIGHT (C) 2007 THE THOMSON CORPORATION

=> S L1
L2 97 L1

=> S (actinol or trimethylcyclohexanone) and L2
L3 84 (ACTINOL OR TRIMETHYLCYCLOHEXANONE) AND L2

=> S saccharomyces and L3
L4 16 SACCHAROMYCES AND L3

=> dup rem L4
DUPLICATE IS NOT AVAILABLE IN 'DGENE'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L4
L5 7 DUP REM L4 (9 DUPLICATES REMOVED)

=> d ibib abs L5 1-7

L5 ANSWER 1 OF 7 IFIPAT COPYRIGHT 2007 IFI on STN DUPLICATE 1
AN 11172553 IFIPAT;IFIUDB;IFICDB <<LOGINID::20070518>>
TITLE: PROCESS FOR ***ACTINOL*** PRODUCTION FROM KETOISOPHORONE
INVENTOR(S): Hoshino; Tatsuo, Kanagawa, JP
Setoguchi; Yutaka, Kanagawa, JP
Shimizu; Sakayu, Kyoto, JP
Tabata; Kazuyuki, Kanagawa, JP
PATENT ASSIGNEE(S): Unassigned
PATENT ASSIGNEE PROBABLE: DSM IP Assets B V NL (Probable)
AGENT: Stephen M Haracz;Bryan Cave, 1290 Avenue of the Americas, New York, NY, 10104, US

NUMBER PK DATE

---------- -- --------
PATENT INFORMATION: US 2006121587 A1 20060608
APPLICATION INFORMATION: US 2003-528843 20030916
WO 2003-EP10295 20030916
20060123 PCT 371 date
20060123 PCT 102(e) date

NUMBER DATE
---------- --------
PRIORITY APPLN. INFO.: EP 2002-216057 20020927
FAMILY INFORMATION: US 2006121587 20060608
DOCUMENT TYPE: Utility
Patent Application - First Publication
FILE SEGMENT: CHEMICAL
APPLICATION
ENTRY DATE: Entered STN: 9 Jun 2006
Last Updated on STN: 9 Jun 2006

NUMBER OF CLAIMS: 11
AB Disclosed is a process for producing ***actinol*** from ketoisophorone which comprises contacting ketoisophorone with a recombinant microorganism or cell-free extract thereof in a reaction mixture, wherein said recombinant microorganism is obtainable by transforming a host microorganism, e.g. selected from the group consisting of microorganisms of the genera ***Saccharomyces*** , Zygosaccharomyces, and Candida, such as commercially available baker's yeast, ***Saccharomyces*** cerevisiae ATCC7754, ***Saccharomyces*** rouxii (Zygosaccharomyces rouxii) HUT7191 (IFO 0494), ***Saccharomyces*** delbrueckii HUIT7116 (***Saccharomyces*** unisporus IFO 0298), ***Saccharomyces*** delbrueckii (Torulaspora delbrueckii) HUT7102, ***Saccharomyces*** willianus HU7106, Zygosaccharomyces bailii ATCC11486, Candida tropicalis IFO 1403, and a mutant thereof, which is capable of reducing ketoisophorone to levodione with a ***levodione*** ***reductase*** gene, e.g. a ***levodione*** ***reductase*** gene derived from a microorganism belonging to the genus Corynebacterium, such as C. aquaticum AKU611 (FERM BP6448) or a mutant thereof, and isolating the produced ***actinol*** from the reaction mixture.
CLMN 11

L5 ANSWER 2 OF 7 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2005:1011887 SCISEARCH <<LOGINID::20070518>>
THE GENUINE ARTICLE: 971ED
TITLE: Substrate inhibition and product degradation during the reduction of 4-oxoisophorone by ***Saccharomyces*** cerevisiae
AUTHOR: Buque-Taboada E M; Straathof A J J (Reprint); Heijnen J J; van der Wielen L A M
CORPORATE SOURCE: Delft Univ Technol, Dept Biotechnol, Julianalaan 67, NL-2628 BC Delft, Netherlands (Reprint); Delft Univ Technol, Dept Biotechnol, NL-2628 BC Delft, Netherlands; Univ San Carlos, Dept Chem Engn, Cebu 6000, Philippines
A.J.J.Straathof@tnw.tudelft.nl
COUNTRY OF AUTHOR: Netherlands; Philippines
SOURCE: ENZYME AND MICROBIAL TECHNOLOGY, (1 NOV 2005) Vol. 37, No. 6, pp. 625-633.
ISSN: 0141-0229.
PUBLISHER: ELSEVIER SCIENCE INC, 360 PARK AVE SOUTH, NEW YORK, NY 10010-1710 USA.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 22
ENTRY DATE: Entered STN: 20 Oct 2005
Last Updated on STN: 20 Oct 2005
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The aromatic diketone 6R-dihydro-oxoisophorone (DOIP) is an important intermediate in the synthesis of some naturally occurring carotenoids. Its preparation via the reduction of 4-oxoisophorone (OIP) by baker's yeast has previously been developed to a pilot-scale process. In this

work, the kinetics of substrate inhibition and of product degradation during the reduction of OIP using resting baker's yeast cells as catalyst is studied. Substrate inhibition during the reduction can be described by a non-competitive type of inhibition. Product is degraded to an unwanted by-product 4S,6R- ***actinol*** by baker's yeast. This reaction can very well be described by a second-order rate equation with respect to DOIP concentration, which is an exceptional case for a whole-cell-catalyzed reaction system. (c) 2005 Elsevier Inc. All rights reserved.

L5 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2004:287922 CAPLUS <<LOGINID::20070518>>
DOCUMENT NUMBER: 140:302437
TITLE: One step process for the reduction of ketoisophorone to ***actinol*** by recombinant ***Saccharomyces*** cerevisiae
INVENTOR(S): Hoshino, Tatsuo; Setoguchi, Yutaka
PATENT ASSIGNEE(S): DSM Ip Assets B.V., Neth.
SOURCE: PCT Int. Appl., 15 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004029263	A2	20040408	WO 2003-EP10295	20030916
WO 2004029263	A3	20040527		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003273889	A1	20040419	AU 2003-273889	20030916
EP 1543134	A2	20050622	EP 2003-757854	20030916
EP 1543134	B1	20070418		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2006500047	T	20060105	JP 2004-538915	20030916
CN 1863919	A	20061115	CN 2003-823205	20030916
IN 2005CN00472	A	20070330	IN 2005-CN472	20050323
US 2006121587	A1	20060608	US 2006-528843	20060123

PRIORITY APPLN. INFO.: EP 2002-21605 A 20020927
WO 2003-EP10295 W 20030916
OTHER SOURCE(S): CASREACT 140:302437
AB A process is provided for producing ***actinol*** from ketoisophorone which comprises contacting ketoisophorone with whole cells or a cell free ext. of A recombinant microorganism that possesses a ketoisophorone reductase and expresses a cloned ***levodione*** ***reductase*** . Suitable recombinant hosts may be selected from the group consisting of microorganisms of the genera ***Saccharomyces*** , Zygosaccharomyces, and Candida. Specifically, com. available baker's yeast, ***Saccharomyces*** cerevisiae ATCC 7754, ***Saccharomyces*** rouxii (Zygosaccharomyces rouxii) HUT7191 (IFO 0494), ***Saccharomyces*** delbrueckii HUT 7116 (***Saccharomyces*** unisporus IFO 0298), ***Saccharomyces*** delbrueckii (Torulaspora delbrueckii) HUT 7102, ***Saccharomyces*** willianus HUT 7106, Zygosaccharomyces bailii ATCC 11486, Candida tropicalis IFO 1403, and a mutants thereof are suitable hosts. Addnl. claimed is a ***levodione*** ***reductase*** gene derived from a microorganism belonging to the genus Corynebacterium, such as C. aquaticum AKU 611 (FERM BP-6448) or a mutant thereof. Thus, when cells of ***Saccharomyces*** cerevisiae strain INVSci are incubated with 5 g/L ketoisophorone for 17 h, 2.8 g/L levodione is produced along with a trace of (4R,6R)- ***actinol*** and 0.65 g/L (4S,6R)-

actinol . After the same ***Saccharomyces*** cerevisiae strain had been transformed with a ***levodione*** ***reductase*** gene from Corynebacterium aquaticum AKU 611, 5 g/L ketoisophorone was reduced to 1.72 g/L levodione, 1,60 g/L (4R,6R)- ***actinol*** , 0.48 g/L (4S,6R)- ***actinol*** and 0,27 g/L S-phorenol ((4S)-4-hydroxy-2,6,6-trimethyl-2-Cyclohexen-1-one).

L5 ANSWER 4 OF 7 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2004:512542 SCISEARCH <<LOGINID::20070518>>
THE GENUINE ARTICLE: 825RN
TITLE: In situ product removal using a crystallization loop in asymmetric reduction of 4-oxoisophorone by ***Saccharomyces*** cerevisiae
AUTHOR: Buque-Taboada E M; Straathof A J J (Reprint); Heijnen J J; van der Wielen L A M
CORPORATE SOURCE: Delft Univ Technol, Dept Biotechnol, Julianalaan 67, NL-2628 BC Delft, Netherlands (Reprint); Delft Univ Technol, Dept Biotechnol, NL-2628 BC Delft, Netherlands; Univ San Carlos, Dept Chem Engn, Cebu, Philippines
COUNTRY OF AUTHOR: Netherlands; Philippines
SOURCE: BIOTECHNOLOGY AND BIOENGINEERING, (30 JUN 2004) Vol. 86, No. 7, pp. 795-800.
ISSN: 0006-3592.
PUBLISHER: JOHN WILEY & SONS INC, 111 RIVER ST, HOBOKEN, NJ 07030 USA

DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 34
ENTRY DATE: Entered STN: 25 Jun 2004
Last Updated on STN: 25 Jun 2004
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB In situ product crystallization was investigated for solid product crystals that were obtained, during fermentation. The model reaction was the asymmetric reduction of 4-oxoisophorone (OIP) using baker's yeast (S. cerevisiae) as a biocatalyst. The target product was 6R-dihydro-oxoisophorone (DOIP), also known as levodione, a key intermediate in carotenoid synthesis. DOIP was-degraded by baker's yeast mainly to (4S,6R)- ***actinol*** , an unwanted byproduct in the process. ***Actinol*** formation reached up to 12.5% of the initial amount of OIP in the reactor during a batch process. However, better results were obtained when the dissolved DOIP concentration was controlled using an integrated fermentation-crystallization process because: (a) ***actinol*** formation was reduced to 4%; and (b) DOIP crystal formation in the reactor was avoided. DOIP productivity was improved by 50% and its selectivity was raised from 87% to 96% relative to the batch process. In the integrated process, most of the product was recovered as pure crystals; this may already minimize, if not eliminate, the need for organic solvents, in the final, purification steps. An almost sixfold reduction in biocatalyst consumption per kilogram product was achieved, which also can contribute to the minimization of waste streams. (C) 2004 Wiley Periodicals, Inc.

L5 ANSWER 5 OF 7 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN DUPLICATE 3
ACCESSION NUMBER: 2003:149609 SCISEARCH <<LOGINID::20070518>>
THE GENUINE ARTICLE: 644PK
TITLE: Production of a doubly chiral compound, (4R,6R)-4-hydroxy-2,2,6- ***trimethylcyclohexanone*** , by two-step enzymatic asymmetric reduction
AUTHOR: Wada M (Reprint); Yoshizumi A; Noda Y; Kataoka M; Shimizu S; Takagi H; Nakamori S
CORPORATE SOURCE: Fukui Prefectural Univ, Dept Biosci, 4-1-1 Kenjyojima, Matsuoka, Fukui 9101195, Japan (Reprint); Fukui Prefectural Univ, Dept Biosci, Matsuoka, Fukui 9101195, Japan; Kyoto Univ, Grad Sch Agr, Div Appl Life Sci, Kyoto 606, Japan
COUNTRY OF AUTHOR: Japan
SOURCE: APPLIED AND ENVIRONMENTAL MICROBIOLOGY, (FEB 2003) Vol. 69, No. 2, pp. 933-937.

ISSN: 0099-2240.
PUBLISHER: AMER SOC MICROBIOLOGY, 1752 N ST NW, WASHINGTON, DC 20036-2904 USA.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 21
ENTRY DATE: Entered STN: 28 Feb 2003
Last Updated on STN: 28 Feb 2003
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A practical enzymatic synthesis of a doubly chiral key compound, (4R,6R)-4-hydroxy-2,2,6- ***trimethylcyclohexanone*** , starting from the readily available 2,6,6-trimethyl-2-cyclohexen-1,4-dione is described. Chirality is first introduced at the C-6 position by a stereoselective enzymatic hydrogenation of the double bond using old yellow enzyme 2 of ***Saccharomyces*** cerevisiae, expressed in Escherichia coli, as a biocatalyst. Thereafter, the carbonyl group at the C-4 position is reduced selectively and stereospecifically by levorlione reductase of Corynebacterium aquaticum M-13, expressed in E. coli, to the corresponding alcohol. Commercially available glucose dehydrogenase was also used for cofactor regeneration in both steps. Using this two-step enzymatic asymmetric reduction system, 9.5 mg of (4R,6R)-4-hydroxy-2,2,6- ***trimethylcyclohexanone*** /ml was produced almost stoichiometrically, with 94% enantiomeric excess in the presence of glucose, NAD(+), and glucose dehydrogenase. To our knowledge, this is the first report of the application of S. cerevisiae old yellow enzyme for the production of a useful compound.

L5 ANSWER 6 OF 7 DGENE COPYRIGHT 2007 The Thomson Corp on STN
ACCESSION NUMBER: ADN10925 DNA DGENE
TITLE: Producing ***actinol*** by contacting ketoisophorone with recombinant microorganism obtained by transforming host microorganisms of ***Saccharomyces*** genus, which reduces ketoisophorone to levodione and isolating produced ***actinol*** .
INVENTOR: Hoshino T; Setoguchi Y
PATENT ASSIGNEE: (STAM)DSM IP ASSETS BV.
(SHIM-I) SHIMIZU S.
(TABA-I) TABATA K.
PATENT INFO: WO 2004029263 A2 20040408 15
APPLICATION INFO: WO 2003-EP10295 20030916
PRIORITY INFO: EP 2002-21605 20020927
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-329888 [30]
DESCRIPTION: Corynebacterium aquaticum ***levodione*** ***reductase*** gene PCR primer LV-ORF(-).
AN ADN10925 DNA DGENE
AB The present sequence is that of PCR primer LV-ORF(-). The primer, which includes a PstI site, was used with primer LV-ORF(+) ADN10924 in an example from the invention for the PCR amplification of the coding sequence of the ***levodione*** ***reductase*** gene of Corynebacterium aquaticum AKU611 (FERM BP-6448). The amplified PCR product was used in the construction of an expression vector for ***Saccharomyces*** cerevisiae. Yeast cells were obtained that were capable of producing 3.3 g/l of ***actinol*** (optical purity 8.15%) from 10 g/l of ketoisophorone in a 25 hour reaction. This is an example of the claimed process of the invention in which ***actinol*** is produced from ketoisophorone by contacting ketoisophorone with a recombinant microorganism (or its cell-free extract) obtained by transforming a host ***Saccharomyces*** , Zygosaccharomyces or Candida microorganism that is capable of reducing ketoisophorone to levodione with a ***levodione*** ***reductase*** gene. ***Actinol*** is useful for the synthesis of carotenoids such as zeaxanthin.

L5 ANSWER 7 OF 7 DGENE COPYRIGHT 2007 The Thomson Corp on STN
ACCESSION NUMBER: ADN10924 DNA DGENE
TITLE: Producing ***actinol*** by contacting ketoisophorone with recombinant microorganism obtained by transforming host microorganisms of ***Saccharomyces*** genus, which reduces ketoisophorone to levodione and isolating produced

actinol .
INVENTOR: Hoshino T; Setoguchi Y
PATENT ASSIGNEE: (STAM)DSM IP ASSETS BV.
(SHIM-I) SHIMIZU S.
(TABA-I) TABATA K.
PATENT INFO: WO 2004029263 A2 20040408 15
APPLICATION INFO: WO 2003-EP10295 20030916
PRIORITY INFO: EP 2002-21605 20020927
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-329888 [30]
DESCRIPTION: Corynebacterium aquaticum ***levodione*** ***reductase*** gene PCR primer LV-ORF(+).
AN ADN10924 DNA DGENE
AB The present sequence is that of PCR primer LV-ORF(+). The primer, which includes an EcoRI site, was used with primer LV-ORF(-) ADN10925 in an example from the invention for the PCR amplification of the coding sequence of the ***levodione*** ***reductase*** gene of Corynebacterium aquaticum AKU611 (FERM BP-6448). The amplified PCR product was used in the construction of an expression vector for ***Saccharomyces*** cerevisiae. Yeast cells were obtained that were capable of producing 3.3 g/l of ***actinol*** (optical purity 8.15%) from 10 g/l of ketoisophorone in a 25 hour reaction. This is an example of the claimed process of the invention in which ***actinol*** is produced from ketoisophorone by contacting ketoisophorone with a recombinant microorganism (or its cell-free extract) obtained by transforming a host ***Saccharomyces*** , Zygosaccharomyces or Candida microorganism that is capable of reducing ketoisophorone to levodione with a ***levodione*** ***reductase*** gene. ***Actinol*** is useful for the synthesis of carotenoids such as zeaxanthin.

=> d his

L1 QUE (LEVODIONE (W) REDUCTASE)

FILE 'DGENE, SCISEARCH, BIOSIS, CAPLUS, BIOTECHDS, IFIPAT, USPATFULL, LIFESCI, MEDLINE, BIOENG, WPIDS' ENTERED AT 12:37:23 ON 18 MAY 2007
L2 97 S L1
L3 84 S (ACTINOL OR TRIMETHYLCYCLOHEXANONE) AND L2
L4 16 S SACCHAROMYCES AND L3
L5 7 DUP REM L4 (9 DUPLICATES REMOVED)

=> log y